COST *and* MANAGEMENT

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CANADIAN SOCIETY OF COST ACCOUNTANTS

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SOCIETY'S NAME ENLARGED

AT our annual meeting in Montreal on April 10, approval was given to the recommendation of our directors, that the name of the Society be changed to "The Canadian Society of Cost Accountants and Industrial Engineers." Application has accordingly been made to Ottawa for this change.

The name of the Society, in relation to its work and especially in relation to production management or engineering, has been the subject of discussion among our directors and members for some time. It was apparent that while production managers or industrial engineers are eligible for membership under our by-laws, they would not be sufficiently attracted to this organization under the restricted title of "cost accountants." And it was felt that valuable work could be done in the field of industrial engineering in Canada, that it is closely enough related to costing to be covered with advantage by the one organization, and that a saving in overhead expense would also be realized by combining these fields within our Society.

Last January a committee, consisting of President Thompson and the Chapter chairmen, was appointed to make a definite report, and their recommendation was approved by the retiring board and at the annual meeting.

The new name is admittedly longer than we would like, but in view of the success of the Society in the past there was strong favour for retaining its former identity, and merely making whatever addition was necessary. What this addition should be was not clear, as there is no term which applies to all who are concerned with control of production. The committee chose "Industrial engineers" because it has become fairly well recognized in the United States, and it serves as well as any other, to indicate the wider scope of this Society.

Our organization is a growing one, and it is possible that in a few years time a name may be found which will more concisely indicate our work. For the meantime, we are retaining our identity with the field of cost accounting, and also providing scope for the study of production planning and control.

S. E. LEBROCQ,
President.

NEW MEMBERS

The following are new members of the Society:

Montreal Chapter

Sparks, N. McD., Northern Electric Company, Ltd., Montreal.
Tirrell, C. U., United Shoe Machinery Co. of Canada, Ltd., Montreal.
Brown, C., United Shoe Machinery Co. of Canada, Ltd., Montreal.
Johnson, T. A., United Shoe Machinery Co. of Canada, Ltd., Montreal.

SPECIAL GENERAL MEETING

MINUTES of Special General Meeting held at the Windsor Hotel, Montreal, on April 10, 1930, at 4 p.m.

R. R. THOMPSON, Chairman. W. A. McKAGUE, Secretary.

Name of the Society—The Chairman presented the recommendation of the Directors of the Society, that the name be changed to "The Canadian Society of Cost Accountants and Industrial Engineers."

It was regularly moved, seconded and unanimously carried, that the name of the Society be changed to "The Canadian Society of Cost Accountants and Industrial Engineers," and that application for supplementary letters patent for this purpose be made.

The meeting then adjourned.

R. R. THOMPSON, Chairman. W. A. McKAGUE, Secretary.

ANNUAL MEETING

MINUTES of Annual General Meeting, held in Montreal at the Windsor Hotel on April 10, 1930, at 4 p.m.

R. R. THOMPSON, Chairman. W. A. McKAGUE, Secretary.

Minutes of Last Annual Meeting.—It was moved, seconded and unanimously carried, that the minutes of the last annual meeting, held in Toronto, March 28, 1929, as printed in Cost and Management of April, 1929, be approved.

Financial Statement.—The Secretary read the financial statement for the year ended February, 1930. Moved, seconded and unanimously carried, that this statement be approved and published.

Report for Year.—The Chairman presented the report of the President and Directors for the year 1929-30. Moved, seconded and unanimously carried, that this report be accepted and approved.

Auditors.—It was moved, seconded and unanimously carried, that the Society express its thanks to Messrs. Fred Page Higgins, F.C.A., and C. H. Pelling, C.A., for acting as auditors, and that they be reappointed for the ensuing year.

Election of Directors.—The following were nominated as directors of the Society for the ensuing year: L. Belanger, J. E. Carpentier, G. C. Leroux, L. A. Peto, and R. R. Thompson, of Montreal; J. E. Carruthers, H. E. Guilfoyle, G. H. Houston, T. S. Jardine, G. M. Mulholland, D. C. Patton and James Turner, of Toronto; S. E. LeBrocq and M. I. Long, of Hamilton; J. S. Anderson, W. J. Mundell, and J. B. Sutherland, of Winnipeg; H. F. Wilson, of Kitchener. It was moved, seconded and unanimously carried, that these, with the chairman and vice-chairman of each Chapter, be directors of the Society for the ensuing year.

Thanks to President.—It was moved, seconded and unanimously carried, that the Society express its thanks to Col. Thompson for his active work and interest in the Society during the past year, and his courtesy in addressing meetings while on a tour of the West at his own expense.

The meeting then adjourned.

R. R. THOMPSON, Chairman. W. A. McKAGUE, Secretary.

FINANCIAL STATEMENT

THE CANADIAN SOCIETY OF COST ACCOUNTANTS
BALANCE SHEET AS AT 28th FEBRUARY, 1930

ASSETS

Cash in Bank		$ 977.28
Province of Ontario Bonds 5%—1959 at cost		2,000.00
Accrued Interest thereon		33.33
		$3,010.61

LIABILITIES

Membership Fees received in advance		$ 910.00
Donation for prizes not expended		105.00
Surplus—1st March, 1929	$1,474.89	
For year ended 28th February, 1930	520.72	
		1,995.61
		$3,010.61

Examined and certified correct,
(Signed) FRED PAGE HIGGINS, F.C.A.
(Signed) C. H. PELLING, C.A.

REVENUE

Membership Fees	$5,768.33	
Less: Paid to Chapters	1,133.00	
		$4,635.33
Interest earned less exchange		76.36
		$4,711.69

EXPENDITURE

General Expenses, including Secretary's Salary and Expenses		$2,343.96
Publications Expense	$1,948.22	
Less: Revenue	101.21	
		1,847.01
Surplus for year		520.72
		$4,711.69

REPORT OF PRESIDENT AND DIRECTORS

Year ended February 28, 1930

THE past year has been one of further growth for the Society. This is evidence of increased interest in cost work and in what the Society is doing for the aid of business.

The following is a comparison of the membership with a year ago:

	March 1, 1929			March 1, 1930		
	Sen.	Jun.	Total	Sen.	Jun.	Total
Montreal Chapter	92	13	105	98	12	110
Toronto Chapter	89	19	108	92	29	121
Hamilton Chapter	34	25	59	36	24	60
Winnipeg Chapter	40	16	56	35	10	45
Central Ontario Chapter	....	....	....	18	5	23
Elsewhere	29	....	29	....	....	....
Total	284	73	357	279	80	359

In the new figures all members in arrears have been omitted, and the actual gain for the year is therefore greater than indicated.

The membership is now all classified by Chapters, each member being attached to the most convenient Chapter.

Finances

Our revenue for the year, from membership fees and other sources, was $5,945.90 compared with $5,412.00 the preceding year. The growth in the Society's work has required some increase in the expenditure, but a surplus of $520.72 remained for the year, which, added to $1,474.89 accumulated from preceding years, gives us a credit balance of $1,995.61. This is held in Province of Ontario bonds and in cash. The Society has no investment in office equipment, and our stock of our own and other literature has been paid for out of current revenue.

Chapters

We believe that the Society should be extended through the organization of Chapters wherever there is sufficient interest in cost work. Accordingly, during the past year a Central Ontario Chapter was started, meetings of which were held in Kitchener, Galt and Guelph; this is one of the leading manufacturing sections of Canada.

The Chapters receive 20 per cent of the membership fees for their local expenses. The following is a summary of their financial statements for the year:

	Balance Brought Forward	Receipts	Payments	Balance Carried Forward
Montreal	$345.37	$388.57	$290.36	$443.58
Toronto	97.08	545.75	440.87	201.96
Hamilton	33.32	163.41	138.62	58.11
Winnipeg	20.73	177.61	124.88	73.46
Central Ontario	.....	40.00	27.15	12.85
Total	$496.50	$1,315.34	$1,021.88	$789.96

A total of approximately fifty meetings were arranged and held by our Chapters during the season now ending. This is more than in any previous year, and the interest in the meetings has been evident.

The Society should be able to add one or more new Chapters during the current year.

Publications

The amount of material in our monthly Cost and Management was increased by about 30 per cent during the year. Our publication is becoming known outside of Canada, and a little revenue is now received from subscriptions and sale of copies.

A pamphlet was also published covering the by-laws and general work of the Society, and giving the names of the members.

Employment

To improve our employment service, we have obtained particulars of the experience and other qualifications of some 75 cost men who are available for new positions. While few openings have come to our attention in recent months, no doubt because business is quiet, some of these men have been placed, and we are in a position to give real help to anyone requiring a man of experience.

Reference Library Extended

Our central reference library has been extended, and now includes over 500 books and articles on costing and related subjects. It is completely indexed and is available to any member. A growing proportion of our members have made use of this service.

Visits by President

While on a personal tour of the west last summer, President Thompson addressed meetings in Winnipeg and Calgary, and met a large number of our members. In January he addressed our Toronto, Hamilton and Central Ontario Chapters.

Summary of Costing Practice

Last December we sent out a questionnaire to 600 manufacturing concerns, to ascertain the progress of cost work in Canada. A summary of the replies was published in our March number, and proved of interest to members and others. We feel that this Society may be the means of gathering useful information in this way, on costing and related problems.

Topic For Year

"The Tie-in of Factory Records" was selected as a topic for discussion in all our Chapters at one or two meetings in the past year. This material will be published shortly. While the handling of the topic was not always systematic, the results should be of some value. It was an experiment, and we believe the idea of a uniform subject should be continued.

Name of the Society

The name of the Society has been discussed by our board, and at Chapter meetings, and after considering all suggestions received, we now reccommend that the name be changed to—The Canadian Society of Cost Accountants and Industrial Engineers.

R. R. THOMPSON, President. W. A. McKAGUE, General Secy.

Plant Ledger Sheets

By W. A. ROBERTSON,
Lever Bros., Ltd., Toronto

(Before Toronto Chapter, October 16, 1929.)

THE plant record illustrated herewith shows detailed cost or appraised value of each unit of buildings, plant or equipment. A trial balance of these values will agree with the total fixed asset values on the balance sheet.

The reverse provides a complete depreciation history. A rate of depreciation is set based on the estimated life of the unit. Columns are provided to show the monthly or quarterly write-off and the cumulative total of the depreciation. A trial balance of these totals will agree with the depreciation reserve.

These plant record sheets are grouped in binders according to departments of the plant so that the depreciation can be distributed readily to the proper manufacturing accounts.

PLANT LEDGER SHEET

.....DEPARTMENT MACHINE NO.....

DESCRIPTION.....

.....

DATE	REFCE.		DR.	CR.	BALANCE

(REVERSE SIDE)

DEPRECIATION

RATE.....

AMOUNT TO BE DEPRECIATED $.....CHARGE A/c.....

PERIOD	AMOUNT	TOTAL	PERIOD	AMOUNT	TOTAL	PERIOD	AMOUNT	TOTAL

Costs in the Paint Industry

By P. PROBYN, C.A.,
Sherwin-Williams Company of Canada, Ltd.

(Before Montreal Chapter, February 6, 1930)

LINSEED oil is manufactured through the process of crushing flaxseed obtained from Western Canada or the Argentine. On arrival at the mill it is stored in an elevator from which it is delivered to the mill as required. The seed passes through rolls to be broken up and after screening into expellers for the purpose of crushing and extracting the oil.

During this process the seed is heated by steam in order to facilitate the extraction of the oil. After crushing, the oil is passed into settling tanks and thereafter into centrifugal machines for cleaning. It is later passed through filter presses for further cleaning and thereafter is allowed to cool. After cooling it passes through the filter presses twice more before it is passed out of the mill for consumption.

The effect of crushing the seed, in addition to producing linseed oil, is to cause the formation of a cake which form a product of the mill and is sold to dealers to be consumed as cattle feed.

In the accounts the purchases of seed which in invoiced in bushels are charged to seed account and as it is withdrawn from the elevator for crushing, the cost value of the quantity withdrawn is charged to an account named so as to indicate that the seed has passed into operations and the quantity recorded in the account in pounds.

Daily Production Reports

The weight of oil produced and the resulting weight of cake is reported daily in pounds, and these quantities are assembled, so as to show the total output of the mill product and by-product the month. The quantity of foots and screenings which are sold during the month are also reported, foots being the mush which is collected from the settling tanks ond filters, while screenings represent grain which is unsuitable for the manufacture of linseed oil and is sold for chicken feed.

A physical inventory is taken at the end of the month of seed which has passed into the mill for operations, but not yet crushed, and this together with the weight of oil and weight of cake produced, deducted from the weight of seed received, discloses the amount of shrinkage that has taken place during operations. These factors determine the weight and value of seed crushed during the month and enables a transfer to be made from this account to Crushing Operations Account, leaving a balance in the original account representing seed on hand which has not yet been crushed.

Crushing Operations Account is further charged with the cost of crushing labour and crushing expenses. Expenses include:

Manufacturing Expenses.—Power, Steam, Light, Maintenance, Filtering, and Sundry Manufacturing Expenses.

Overhead Expenses.—Superintendence, Taxes, Insurance, Depreciation, and Office Factory Expense.

Crushing Operations Account is now credited with the value of cake at the market price, leaving a balance in the account which determines the cost of oil in bulk, this balance being transferred to Bulk Oil Account. The cake transferred is debited to Ground Cake or Unground Cake Account in accordance with its disposal in a ground or unground condition. These accounts are further charged with packing, loading and shipping, as well as grinding in the case of meal or ground cake.

Quantities of oil filled in barrels or consumed in paint factory or treated or boiled are reported and transferred from Bulk Oil Account and the balance of the account thereafter determines the inventory of bulk oil on hand at cost.

The cost of oil sold to customers is ascertained from the bulk oil cost, together with the cost of containers and filling wages, and the difference between this cost and the selling price gives the gross profit made on the sale.

Oil supplied to the paint factory is piped from the oil mill at a very small expense, and the difference between the bulk oil cost, together with this expense and the price at which it is charged to the factory, represents an oil mill profit or loss which is transferred to the Oil Mill Trading Account.

White Lead

White lead is manufactured by the corrosion of metallic lead which is mined in British Columbia and is delivered to the lead works in pigs.

The pig lead is melted in kettles and blown or atomized into a fine powder by live steam, the powder entering a conveyor from which it is loaded into a truck and weighed. It then passes into a cylinder for the first process in corrosion.

Carbon dioxide is injected into the cylinder and periodically the lead powder is sprinkled by skilled operators with diluted acetic acid. The skill with which this sprinkling is done comprises the main art in the manufacture of white lead. After several days the cylinders are emptied and the lead is conveyed to thrashing machines, where the lumps which have formed in the cylinders during the first process of corrosion are broken up. After thrashing it is re-loaded into cylinders for the final process, carbon dioxide again being injected and sprinkling with diluted acetic acid again taking place periodically over a period of a few days. At the end of this period the process of corrosion is complete.

The white lead now passes into a washing machine to eliminate grit, metallic lead and poorly corroded lead. It also passes through drags to further rid it of impurities, and ultimately it passes through screens for a final cleaning. At this point there is a parting of the ways, some of the carbonate passing into a drying room for dry lead packing or to mixers for lead in oil packing. After drying the dry lead is conveyed to pulverizers and into packing machines and packed into barrels. The lead in oil after mixing passes into grinding mills, from which it goes into containers for sale.

Cost accounts are prepared on a monthly basis. The cost of the lead atomized is determined by adding the receipts of pig lead during the month to the inventory of pig lead on hand at the beginning of the month, and deducting the inventory of pig lead at the end of the month, together with dross made during the process in the kettles.

The quantity of lead corroded is similarly calculated by adding the pig lead atomized during the month to the inventory in kettles at the beginning of the month and deducting the inventory in kettles at the end of the month. To the cost of the lead corroded ascertained in this manner there is added the cost of: Acetic acid, coal and power, coke, sal soda, and water. To this there is added the cost of labour:— Handling piglead, atomizing, corroding, washing, drying, packing, engine-room and sundry factory expenses.

Machinery repairs, consisting of supplies and cost of labour, and building repairs, consisting of supplies and labour, are taken into account, as well as tools and supplies. Other manufacturing expenses include: Superintendence, factory office expenses, rent or depreciation, taxes, insurance, employees liability.

These costs assembled together are applied against the total quantity of carbonate produced to determine the cost per hundred lbs. of the product.

The cost of lead in oil is ascertained by applying this cost, less the expense of drying, and substituting the expense of packing lead in oil for packing dry lead, as well as adding the grinding charges and wages.

Paint Factory

Paint is manufactured by the mixing and grinding of dry raw materials and the addition and mixing of liquid raw materials.

In the mixing of the dry raw materials sufficient of the liquid raw materials is included to make a paste which passes from the mixer to grinding mills. The number of hours that the paste remains in the grinding mills depends upon the quality of the paint which it is desired to produce, and consequently the application of the cost of grinding plays a very important part in determining the cost of the product. After the grinding period sufficient for the selected quality of the paint is complete, the paste passes into thinning tanks where it is mixed with the liquid raw materials. From the thinning tank the product passes through pipes to the filling department, where it is filled into containers for sale.

The dry raw materials consist of white lead, zinc, dry colours and colouring matter, such as ochres, siennas, umbers, chrome yellows, etc., while the liquid raw materials consist of linseed oil, driers, turpentine, etc.

The order for the manufacture of paint emanates from the stockkeeper's office and indicates the formula or rex number and the quantity required in the various sized packages. On receiving the order the factory superintendent issues a manufacturing slip on which is entered a serial slip number, the rex number, the date and description of the goods. A foreman on receiving the manufacturing slip inserts the formula of ingredients and the quantity of each of the raw materials needed to make a batch or standard quantity of the goods. He also inserts a normal output per batch and the standard weight

per gallon. This information is obtainable on a formula record on file in the manufacturing department. On receipt of the manufacturing slip the foreman issues a mixing slip, specifying the materials and the quantity of each to be used. The mixing slip is passed to the mixer, who obtains the dry raw materials from the receiving and stores department.

The number of batches going into the process are indicated on the mixing slip at the time that each batch is weighed. The slip with the dry material is then passed to the mill which it is indicated on the slip is to be used for the operation. Upon completion of the mixing the slip is returned to the foreman, who inserts on the manufacturing slip any changes which it may have been necessary to make since the manufacturing slip was issued.

The next step is grinding, and a daily grinding report is made up showing the manufacturing slip number, the rex number, the number of the mill in which the grinding has been done, the number of hours the mill has been grinding and the number of batches ground.

A grinding card is kept in the factory office on which is entered the details shown on the daily report of grinding. As each batch is mixed, ground and run into the filling tank a gallon of every batch is weighed up and sent to the testing department, together with a slip showing the rex number. After the batch has been approved by the testing department as being up to standard, the filling department is instructed to proceed with the filling. The filling department makes a daily report of the quantity of paint filled in each size package, such as pints, quarts, gallons, etc., showing on the report the date, the rex number and the slip number, and this report is sent to the factory office. The details shown on the daily filling report are entered on the grinding card in the factory office.

The next step is the labelling and finishing in the finishing department, and a memo accompanies the paint from the filling department to the finishing department, stating the quantity and sizes of the goods being handed over. This is checked with the kind and quantity of material actually received and a duplicate is sent to the factory office where it is checked against the daily report of packages filled.

All labour for mixing, grinding and filling is distributed on the time card of each man showing the slip number and rex number and the operation performed. The information on the time card is entered daily on the grinding card in the factory office. The manufacturing slip is now sent from the factory to the factory office, and the accumulated details on the grinding card in the factory office are entered on the manufacturing slip. The manufacturing slip, therefore, now shows the raw materials used, the number of batches made, the total gallons produced and the total hours in the grinding mills, as well as the number of the mill.

A valuable check is provided at this point by a comparison with the quantities on the manufacturing slip which have been entered by the factory superintendent with the quantities shown on the grinding card in the factory office, which have been compiled independently. The two quantities should agree, and if not there is waste or loss which can be investigated.

A mill hour rate is applied to the number of grinding hours to obtain the total grinding expense, consisting of power and maintenance of the mills. At this point the manufacturing slip will show the total cost of raw materials, the total cost of labour and the grinding expense. It remains to add departmental and general over-head to ascertain the full cost of the product.

Department Over-head consists of: Light and heat, gas, solder, unproductive labour in the department, and department sundries.

General Over-head consists of: Superintendence, taxes, insurance, depreciation, stationery, telephone, factory water, testing and laboratory expense, maintenance of buildings, and factory sundries. With the addition of the departmental burden and general over-head the cost of the product is complete.

There is a further method of ascertaining the costs by which the manufacturing slip will show the total cost of raw materials in the same manner as in the method already described, but in place of applying a mill hour rate to cover the grinding expense and adding labour and over-head a unit factor is used per hundred gallons to take care of all the expenses. The various classes are assigned the number of units applicable to them, and this is multiplied by the unit factor to cover the costs described.

Both methods have merits in the cases in which they are used. The direct cost finding from the actual costs shown on the rexes is most reliable in the case of a factory producing a vast number of classes of paint, while the unit factor provides a speedy method of calculating the costs in a factory where the products are not made in so many varying kinds. Where it is possible to use the unit factor the results are satisfactory and may perhaps be regarded as better than those obtaineed by the direct method, since the efficiency of the direct method will depend upon the accuracy with which the men's time cards state the number of hours they have been working on the different operations and the number of hours that the mills have been grinding.

A further problem now confronts the cost accountant before his work is finished, since the material has been filled in containers of many varying kinds and sizes and the material has been produced in hundreds of differing qualities.

The gallons in value of each run of paint is entered each month from the manufacturing slips on cards showing the quantity in each package manufactured. The rexes are grouped into classes and a summary of the rexes in each class is made up monthly, showing the total material cost for the class. The total package cost for the whole class is now added to obtain the ultimate cost of production.

Package costs consist of the cost of cans, kegs, barrels, plus freight and handling and the cost of cases, labels, sawdust, nails, etc., and labelling wages, and is determined per 1,000 packages. The package cost per 100 gallons is therefore ascertained by multiplying the size of packages by the cost per 1,000 and dividing by 100.

The cost of labels will be determined by the printing department and consists of:

Material.—Paper, ink, art work, engravings and electros.

Labour.—Composing and press work.

Over-head.—Superintendence, maintenance, taxes, insurance, light, heat, cleaning, telephone, depreciation, office salaries and office expense. It might be mentioned here that all material produced by a department comprising a separate industry, such as the printing department, for use elsewhere in the undertaking is subject to sales tax, just as though the materials were sold and inasmuch as there is no sale price, the amount on which the tax has to be paid is computed by taking the cost of material plus 220% of that cost. As far as labels are concerned, however, there is no tax payable, since the label goes to form part of the finished product on which sales tax is paid when the goods are sold.

The material bulk cost, together with the package cost for all rexes and all classes for the month, gives the monthly value of output of the whole factory, and the work of cost-finding is concluded.

There is a further record of considerable importance and comprises an analysis of all manufacturing slips. This analysis shows the manufacturing slip number, rex number, quantity and value of the paint produced, this being distributed as between raw material, grinding cost, productive labour, department burden, general burden, and packages.

This record serves the purpose at the end of the year of permitting an analysis to be made of the deficit or surplus in the factory accounts by a comparison with the ledger accounts of raw material, packages, wages and expense.

COST ACCOUNTANTS NEEDED?

Extract from the Interim Report of Hon. Justice Hodgins, commissioner of the Province of Ontario, on Compulsory Insurance and Safety Responsibility Laws, March 3, 1930:

"At the outset of my inquiry into the reasonableness of the 1929 automobile insurance premium rates in Ontario, I was confronted with the major difficulty that the majority of the insurance companies transacting, in the three or four years immediately prior to April, 1928, upwards of sixty per cent. of the business in the Province, had failed to establish any real system of cost accounting in their offices, and were thus quite unable to produce before me any reliable statistical records showing the cost of automobile insurance in Ontario.

"The rate-making procedure of the Canadian Automobile Underwriters' Association contemplated the making of rates on the basis of a statistical record of loss cost experience, and its by-laws required its member-companies to keep such records according to a uniform statistical plan, but it developed that the majority of the companies were not members of the Association during that period and had kept no useful records of their own experience, and that even companies, members of the Association, had failed to keep the required records and contribute their experience to the Association."

The Unit Quantity Survey

By HUGH JOHNSTON,
Sterling Appraisal Co., Ltd.

(Before Hamilton Chapter, Feb. 19, 1930)

MR. PRESIDENT, you may be sure that I appear before this distinguished gathering—the members of the Canadian Society of Cost Accountants—with considerable diffidence.

While I appreciate the honour of the opportunity afforded me of being included in this gathering, I must confess to a feeling of embarrassment in appearing before a body of highly technical men to enlarge upon the matter of appraisals with only the equipment of a non-technical mind. However, my thought to-night is only to show the application of the completed engineers' appraisal report to the varied phases of finance and industry maintaining to-day.

The correct appraisal of all the assets of a company is so far-reaching in its influence that it is a difficult matter to point to the particular spot at which the greatest benefit accrues. To know the actual value of all holdings is to possess a knowledge that is satisfying to the holders, but is in itself simply the beginning of the usefulness of a correct appraisal. An appraisal by a thoroughly capable organization has such a determined effect upon property sales, insurance, cost accounting, and the like, that its influence extends so far into commercial activity as to stamp it as the basis for all values.

In our journey towards that goal of ultimate perfection to which we are all striving it was found very early in the game that to be in a position to establish the sound physical values of buildings, machinery and equipment, we must go farther than the old methods of appraisal companies already obsolete in establishing those values, and from this necessity emerged the "unit quantity survey" long used in Britain and subsequently adopted by some companies in the United States. This unit quantity survey as now prepared gives the actual count or measurement of all materials entering into the construction of a building, giving the owner of the buliding the immediate means of checking any values established and making it possible for the appraisal engineer to show specific depreciation on all of these materials. We can no longer in justice to the public who are investing their funds in the securities of the industries of the nation certify under our sign manual to values that in a report would show a general rate of depreciation over roofs, doors, glass, brick, steel, cement and the like, —the lives of these materials are not as one, they are short-lived or long-lived as the case may be, and hence each unit bears its own rate of depreciation. The unit quantity survey enables us to make the depreciation on these materials as is—some high, some low, but all indicated in a way that can readily be found if required.

Value of Appraisal in Fire Insurance

So much for the sound values for the investor, but what of the industrialist—the owner of the plant—and incidently the purchaser of the report, of what use will the unit quantity survey be to him? We might commence with the question of fire insurance. Fire insurance does not insure the property itself—it insures the owner against

loss on the property. This loss is measured in terms of "the actual cash value." The policy defines "actual cash value" to be the cost to replace the property, at the time and place the loss occurs, "less a depreciation however caused." Insurance adjusters do not settle on the basis of value new for the reason that the policy stipulates the actual cash value; that is, the depreciated or sound values. The adjustment of fire loss brings us to many angles. First of all in the minds of the fire loss adjuster at the commencement of operations comes the element of moral hazard—that, gentlemen, is one angle in fire loss adjustment in which the services of the appraisal company do not enter and in looking into the rugged honesty of the faces surrounding me I am convinced that in your case at any rate this very important influence in fire loss adjustment need not be enlarged upon.

The actual fire loss suffered in the event of damage through fire on buildings, machinery and equipment is in many cases a hard matter to determine. Fire loss brings the fire loss adjusters appointed by the companies—men of probity, wide experience and with a sense of honour as high even as that found in the court of our Dominion. Their "job" is to determine the actual loss sustained on buildings, machinery and equipment for the companies—with the onus of proof-according to the contract—being upon the assured. Without the assistance of unit quantity survey of the buildings and a specific depreciation on each item of machinery the *opinion* of your loss must be procured from contractors, machinists, electricians, and others, sound men no doubt, but only giving an opinion, and one good man's opinion is not better than another's, the adjuster makes *his* report—say a replacement loss of $100,000 with depreciation of $40,000, making the liability of the Insuring companies $60,000—your advisors and your own opinion is that your replacement loss is $120,000 with depreciation of $20,000, making the companies liability $100,000. Immediately there is a difference between decent people of $40,000, perhaps the difference is split, leaving the insured and the insurers both feeling dissatisfied, or it may even go to the courts with the obligation upon the assured to prove his case.

With the same conditions prevailing and a unit quantity appraisal in your vaults—the appraiser would take these reports, appraise your loss in detail, showing specific depreciation on each item of construction and of equipment destroyed or damaged, present same to the adjuster as your "proof of loss"—a proof of loss being required by the companies—and as said the onus of proof being upon the assured—and your discussion with your adjuster would be with regard to specific quantities and specific depreciation—small amounts in themselves but aggregating a considerable sum but making for quick and satisfactory settlements.

In this way the minds of the insurer and the insured have met and the value of the loss has been clearly set forth using the appraisal as a basis for agreement. The adjustment has been an easy one and there is nothing to arbitrate nor for the courts to construe.

Co-Insurance Obligation

Then again in this adjustment the question of the co-insurance obligation appears. Your policy contains a clause obligation the assured to maintain insurance on his buildings and equipment to an amount not less than say 80% of the actual cash value thereof and

failing so to do in the event of loss becomes a co-insurer to the extent of an amount sufficient to make the aggregate insurance equal to this 80% of the actual cash value and in that capacity shall bear their proportion of any loss that may occur.

The co-insurance form of insurance is carried by practically all plants of any consequence to-day and in fire loss adjusment where co-insurance maintains before settlement is made, it is incumbent upon the assured to prove that he carried out his co-insurance agreement by having sufficient insurance over all to warrant the companies paying the amount of the claim and for him to escape penalty for under-insurance.

This of course necessitates the valuation of the entire plant and here again the appraisal report and its producers, the construction and mechanical engineer, are called in to service. By their showing that at the time of the fire loss 80% of the sound or cash value of the plant was insured the amount of the claim already agreed upon is paid.

If however the unappraised plant is found to be at fault in not carrying 80% of its sound value the assured will be penalized in his settlement by receiving a proportionate reduction in the amount of this settlement.

Helps in Cost Accounting

Now gentlemen I would like to have you turn your minds to the assistance provided by a unit quantity survey in establishing the "factory burden" in preparing your department operating costs. A unit quantity survey will establish the factory burden of each floor foot of your plant—by Departmentizing your machinery and floor area the factory burden is arrived at and in many cases surprising results have been shown when these proportions of costs have been established. A unit quantity departmentized appraisal for a manufacturing plant is as necessary as a standardized cost system and really the basis of the cost system is the plant appraisal report. The appraisal report kept up-to-date is as important as your inventory. The inventory and book value generally give original cost with government rate of depreciation. The appraisal gives the replacement cost and the present value in accordance with the physical condition of your machinery—an entirely different story. The departmentized appraisal often establishes the proportionate charges in as many as 60 or 80 departments—some departments such as maintenance departments—being non productive, their area cost must be absorbed in a proportionate way by the producing departments—each producing department absorbing its quota of the non producing value until the picture has been properly completed.

With these percentages and proportionate costs of the factory burden established it is a comparatively simple matter to bring these figures into your general producing costs.

Many fluctuations in cost of buildings and machinery have taken place since nineteen fourteen, many fluctuations in labor efficiency have taken place in a like period, all of these angles have an influence on plant costs, but all of them are readily ironed out by a standardized unit quantity survey of your plant.

I wish to thank you, Mr. President and gentlemen, for your forbearance to-night and also for the opportunity afforded me of meeting you at your gathering.

The Economics of Cost Accounting

By E. D. McCALLUM, M.A.,
Lecturer in Economics, Armstrong College, University of Durham.

(Lecture delivered to the Newcastle and District Branch of the Institute of Cost and Works Accountants.)
(From "The Cost Accountant.")

THERE are two dangers of almost equal significance to which the specialist in any one branch of knowledge is liable to be exposed. There is, on the one hand, the tendency to belittle the activities and results of specialists in other or even allied fields, and on the other, the temptation to apply to studies outside his own and upon material which is altogether inadequately understood, methods of reasoning, analysis and observation upon which he has learned to place reliance as a result of experience gained in his own field. To succumb to the first, apart from the narrowness of outlook which it suggests, is to run the risk of making specialist studies unbalanced and to leave their results in a state of suspended animation from which they can only be rescued by a wider synthesis which seeks to co-ordinate results achieved by specialists in different branches of work. The specialist, of course, has served his purpose but his disregard for, or his scepticism of the value of the work of others, is easily liable to reduce the significance and importance of his own. To succumb to the second, is to rush, unqualified, into fields of work where angels fear to tread, and to invite legitimate doubt as to whether such a fool can be trusted as a guide even on his own ground.

Between the Scylla of over-specialisation and the Charybdis of incompetent intrusion, students of economics of the present generation have, on the whole, steered a successful course. From the first of these dangers economists have been saved by the clear realisation of the complexities of economic life. The student of economics is almost continuously aware of the influence which activities completely outside the strictly economic sphere exercise upon the subject matter of his inquiries. Accordingly, in order that the conclusions which he reaches may as far as possible be consistent with the world as it exists, he is ever on the alert for developments in other fields of work, especially if these developments are likely to be of use in aiding his study towards the goal of all science, namely, greater precision in generalisation. In consequence, it may well be doubted if there is any other branch of knowledge which so much teaches its devotees to be tolerant of the work of specialists in other fields.

From the other danger, which has been distinguished, economists too have been remarkably free. Keenly aware of the complexities which surround their own subject and warned by the fate in other fields of enthusiasts less cautious than themselves, they are wary of expressing dogmatic opinions upon subjects with which they cannot claim first hand acquaintance.

It may seem to some that in discussing the subject which I have undertaken to present, a tyro in economics in the praiseworthy at-

tempt to convince Cost Accountants of the economist's interest in the subject of Accounting and particularly in that branch of it known as Cost Accounting, is certain to commit the folly of assuming a knowledge of a highly technical and difficult subject with which, in fact, he is altogether unacquainted. If it was the purpose of this discussion to analyse and determine the difficulties which beset the Cost Accountant in the actual application in accounting practice of the abstract conceptions of economic theory, such an inference would be completely justified. I am only too conscious, however, of the danger and difficulties of any such attempt, and the object of this paper is the much safer and much less contentious one of suggesting to you (1) the nature of the economic problems and conceptions with which Cost Accounting and economics, each in its own separate way, has to deal, (2) the gain which would result to each of these subjects from a fuller co-operation between them and (3) the lasting and cumulative benefit which the community would be almost certain to achieve from the co-operation between the Cost Accountant and the economist.

Economic Views

Let us look for a moment at the first of these aspects, namely, the nature of the economic conceptions which are common both to Cost Accounting and economic theory.

The central problem of economic theory is to provide a rational explanation of the forces which regulate value. That is, it is the aim of this branch of economic theory not only to account for the rates at which different commodities and services exchange for one another but further, to provide such an explanation of the influences which determine them as will serve as a guide to the future. It is not enough that the ratio of exchange existing between different commodities and services, or if you prefer to think of the matter in terms of some common medium of exchange, that the existing system of prices should be explained. Explanation is but the first step by which the economist, like all other seekers after truth, hopes to attain to prediction. If economic reasoning and analysis is to be of service it must be able to go a step farther and provide the basis upon which, apart from disturbing conditions, future movements may be foretold with some degree of accuracy. Now in the course of the last century and a half, considerable progress has been made by successive thinkers in providing an organon of thought capable of explaining the existing price system and of suggesting the considerations of which account must be taken in forecasting not only future movements of prices but also changes in the direction of economic phenomena generally. Now no small part of the progress which economic science has made is due to a clearer understanding of the importance of the part played by "cost of production" in the regulation of value. It would take me too far from the subject before us to outline the various stages by which this clearer understanding has been achieved. For those interested in the subject, I may refer to the works of Professor Edwin Cannan—a recognised master in this field. It must suffice for me, therefore, to say that the notion of "marginal cost of production" due to the late Professor Alfred Marshall and developed by his successor Professor A. C. Pigou, at Cambridge, has been one of the gateways to the progress which economics has made in the last genera-

tion. By "marginal cost of production" economics means broadly the costs of production which are entailed by producers (1) who are just on the margin of doubt whether to increase by a little the production of the commodity or the rendering of a service in which they are interested and (2) who may be contemplating an incursion into some industrial activity toward which they are tempted by current price. Now modern economic theory teaches us that if we are to understand the causes which regulate value it is to this "margin" that we must go in order to watch the play of the forces which govern value.

Differences Among Industries

Another step in the same direction was made when it came to be recognised that cost of production and marginal cost of production vary in different ways in different industries. Although economists had no actual statistical data upon which to base their opinions, general observation over the course of the development of industry was sufficient to indicate this truth to them. Accordingly, in order to facilitate their exposition of the causes which determine value and prices, economists divide industries into three broad, but still hypothetical, classes, namely (1) industries of increasing cost or diminishing return; (2) industries of decreasing cost or increasing return; and (3) industries of constant cost or constant return. By an increasing cost industry is meant, broadly, an industry in which additional increments of output of equal size can be obtained only at a greater outlay of labour and sacrifice, while by a decreasing cost industry is meant one in which, as a result of the so-called economies of large-scale production, additional equal units of output can be obtained at a less expenditure of effort and sacrifice. The agricultural and extractive industries, such as mining, are generally regarded as examples of the first class of industry and the manufacturing industries are taken to represent the second class. If an industry can be imagined in which one stage is conducted under the influence of increasing cost and another stage under the influence of decreasing cost, and if the increasing costs at one stage are exactly counterbalanced by decreasing costs at the other, then the industry is said to be one of constant cost.

Now you will readily appreciate the significance from the Cost Accounting point of view of these developments in the field of economic theory. As I understand it, it is precisely with the problem of cost in a somewhat narrower connotation that Cost Accounting deals. Just as economics seeks to explain the value of any commodity or service by tracing the factors which constitute the cost at which that commodity or service is obtained for the commodity, so it is the aim of Cost Accounting to trace and allocate by product, job, department or process the component items of cost for some particular business. The practical difficulties in the way of the realisation of the aims of his subject are, I suppose, known only adequately to the experienced Cost Accountant. Certain items, in the classification of cost with which the practice of business and perhaps the reasons of economic theory have provided Cost Accounting, can be traced and allocated with a high degree of certainty. Other items on the other hand, are difficult to isolate and even when isolated present problems with varying solution in their allocation. Thus the so-called "direct costs,"

or "prime costs" such as direct wages, materials, and even power, present few difficulties, but the trouble begins when the items which constitute the "indirect costs" or "overhead costs" have to be singled out and allocated. Apparently, items which must be included at certain times for certain purposes, must be excluded at other times for other purposes. Thus, for example, the answer to the question whether allowance must be made for interest upon capital invested in a business, in estimating for contracts, will vary according to the stage in the trade cycle through which industry is passing. In a business or industry which is clearly operating under conditions of decreasing cost it will happen that, in times of bad trade with low prices, the items of overhead cost will bear heaviest per unit of output. In such cases, and for short periods only, it may be legitimate as well as necessary to exclude interest on capital. But in times of good trade when prices tend to be high and cost per unit of output low, interest on investment must rank for its place as an item of cost. In the long run, of course, there can be no doubt about the matter. The continual flow of resources into industry is dependent upon the reward which investors and savers secure for making the necessary provision. A check to this reward will soon bring about a reduction of resources devoted to any particular purpose.

Now just as it is the object of the economist to suggest the distribution of resources and efforts which yields a maximum return, so it is the object of the Cost Accountant to achieve this result within his particular domain. Under the influence of the "principle of substitution," that is, the tendency to substitute the more efficient for the less efficient means to an end, the forces in the economic world are constantly tending towards a position of equilibrium at which nothing can be gained by a rearrangement of resources and efforts. The operation of the mechanism by which this equilibrium is achieved has been greatly improved by the advent of Cost Accounting. Cost Accounting indicates clearly the line along which expansion can be profitably undertaken, as well as suggesting the limits beyond which, at any particular time, it would be unprofitable to proceed further in any particular business or process. Here we have indicated the practical significance of Cost Accounting as it affects the welfare of the community but we will leave it for the moment and return to it in the third section of this paper.

General Problems Are Similar

It will be evident from what has been said that economics and Cost Accounting each in its own way is concerned with the same general problems. It would seem indispensable, therefore, that these subjects should co-operate and that results achieved in the one would be useful in aiding the progress of the other. Let us look briefly at the ways in which each can be of service to the other.

The aid which Cost Accounting can render to the economist is great indeed. The Cost Accountant in his daily task is working with the raw material upon which economic theory is dependent and without which its progress towards precision is impossible. Necessarily, therefore, any co-operation between these subjects which would place at the disposal of the economist the cost statistics which form the bricks of which a large part of the edifice of economic theory is constructed, would be of immeasurable service. Professor Marshall has

said that statistics are the straw of which the economist's bricks are made. Now in recent years an ever increasing supply of this statistical straw has been made available to enquirers into the problems of economic life, but there are many gaps to be filled. Not least of these is the almost complete lack of reliable statistical information concerning costs of production in different industries to say nothing of different costs in different districts and different types and sizes of plant. The economist, of course, is fully aware that there may be a legitimate objection on the part of those immediately concerned with the direction of business to the detailed publicity which the enthusist might well demand. He finds it difficult to believe, however, that in this country no further progress towards making available the valuable statistical information contained in the files of business concerns can or should be made. No economist would ask for the widespread publication of the intimate details of the individual business, whether public or private, but he thinks, and with good reason, that there could be no objection to the publication by industries of abstracts and summaries of the materials which the individual business within each industrial group collects in the course of its daily operation. In this country, in the case of one of the great industries, namely coal, some such publicity has been secured. In the U.S.A. a great deal of statistical information concerning cost of production in different industries has been published through the agency of the Federal Trade Commission and its predecessor, the Bureau of Corporations. Difficulties, of course, are sure to be encountered. But the mere existence of difficulties ought to be no reason for failing to make the attempt. The history of the attempt of the Bureau of Corporations in the U.S.A. to secure the data which it required in its investigations is instructive. In the course of a pre-war inquiry into the steel industry the Bureau had occasion to require returns to be made concerning detailed cost of production in that industry. The first difficulty which the Bureau encountered, and this is one which would confront many industries in this country even in the year of grace 1930, was that of securing comparability in the returns collected. A uniform system of accounts had to be devised and, in the case of concerns innocent of Cost Accounting methods, experts from the Bureau had to be sent to the plants concerned in order to instruct officials in the art, or science, of Cost Accounting. Another objection, safely overcome by the Bureau, and this is the objection of which most is heard in this over-conservative country of ours, is that the position of the individual business is revealed in the publication of the final result. For that belief there is, of course, no real foundation whatsoever. It is really surprising to know the extent to which detailed information can be published without making it possible for the outsider or the competitor to discover, even approximately, the position of individual businesses. In the investigation to which I have referred, statistical information concerning cost of production was finally made public in great detail. Items of cost, such as materials, labour, superintendence, administrative charges, etc., were published for every stage in the process of steel production from the raw materials to the finished rolled products, not only for the industry as a whole, but by districts and by large and small concerns respectively. Indeed, in the case of the U.S. Steel Corporation data on these lines

was published plant by plant without revealing the identity of any one of them. This kind of work was continued by the Federal Trade Commission under the direction of the War Industries Board, through the later years of the war for other industries besides that of steel. In the case of steel, these figures were continued after the war and published by the F.T.C. Unfortunately some of the concerns which were making returns to the Commission took advantage of the legal position and secured in the Courts an injunction restraining the Commission from requiring returns of cost data. The basis of the objection to making returns is difficult to see. No company figures were revealed. One would not care to think that the concerns were anxious to hide data which would, if handed over to other departments of the Government, expose their liability to higher taxation than that which they were paying.

Much remains to be done in this country in the direction of the developments which I have indicated to have taken place in the U.S.A. An increasing realisation of the value of publicity is urgently required among business men in this country. To members of the Accounting profession, in all its branches, belongs the duty of encouraging this realisation, not only on behalf of the community as a whole, but on behalf of industry in particular and of the business man himself.

Statistics, *en masse*, are becoming increasingly available concerning many aspects of industrial and social life, but those concerning business activity or business success are still lacking. If business men were more willing, through their respective industrial associations or federations, to permit the publication of much of the material which the Cost Accountant handles, the economist and the statistician would be enabled to increase the precision of their work by having constantly available the means of providing the statistical verification of their theories. Many of the "economic boxes" which Professor Clapham has declared rightly to be empty, might then soon come to be filled with some degree of accuracy. If the economist's desire to fill the boxes, which he knows only too well are as yet empty, is to be realised, it is to the Cost Accountant in the end that the economist must turn for material, and it is to him, in no small measure, that he now looks for help and support.

Next, what in return can economics do for Cost Accounting? I will not take time to elaborate in detail the benefits which I am certain must accrue to the technique and practice of Cost Accounting from an increasing undersanding of economic principles. What I have said earlier will be sufficient to indicate the high degree of matuality which exists between Cost Accounting and economics. Sir Josiah Stamp has stated that "the development of accountancy" (and the same can be said with even greater force of Cost Accounting) "with the evolution of industry and society is going to be better if its received principles are shot through with light from other angles than the legal, the financial and the technical."

In many respects the light which Cost Accounting can receive from economic theory is likely to be illuminating. I have seen it remarked, by a Cost Accountant, that more losses have been incurred by the application to businesses of systems of Cost Accounting which were altogether unsuited to them than by failure to install any system of Cost Accounting whatsoever. In such cases it appears to the out-

sider that Cost Accounting wrongly applied is proving a bad master instead of a good servant. Cost Accounting is much more likely to be a good servant if it is used by a person who has a clear understanding of the nature of economic problems and the conceptions and practical significance of economic principles than by one who is altogether unversed in the intricacies of this branch of knowledge. Without some such understanding, no matter how it may have been gained, I doubt if the material which Cost Accountants collect so painfully can be used intelligibly and be made to do the work which it ought to be able to perform. Later I shall indicate the significance and the importance of the practical application of accepted economic opinion.

Connected With Management

And now we come to a brief consideration of some of the ways in which the community as a whole might be expected to derive benefit from the closer co-operation between these two important subjects.

In the first place this co-operation might be expected to secure results which would enable a wiser and more profitable use to be made of economic resources. Modern economic theory teaches that the National Dividend or Income is likely to be greatest when resources alike of capital and labour are so distributed that the return which they receive at the margin of profitable application is everywhere equal. Now, without precise information concerning the relative attractiveness of different possible lines of investment of resources, the distribution which the working of the economic system, under the influence of competition, actually achieves, cannot but be a mere rough approximation to the theoretically desired distribution.

Secondly the waste which misapplication of resources brings about in normal times is greatly increased in times of industrial boom. "The almost furious industrial energy of a boom period spends its excesses in wastes and inefficiencies, and speculation and extravagance, and fails to result in anything like a proportionate rise in the country's total production of actual goods," writes L. D. Edie. Business needs, and needs urgently, some guide in the welter of rapid change which comes about in the modern economic world, and the basis of such guidance is to be found largely in the cost experience of industry. "If the efficiency of management were stabilised the hectic efforts of great prosperity would be unnecessary, and if enough concerns were capably managed all of the time, a major step forward towards the prevention of violent depression would have been taken." For this purpose an index of managerial efficiency is required. Few will doubt the truth of E. N. Hurley's assertion, quoted by Edie, that "intelligent Cost Accounting lies at the basis of efficient management" and that "inefficient practices in our (American) industries . . . . are almost invariably due to lack of adequate information." In order therefore that this purpose may be achieved the following requirements must be met: (1) The institution of scientific cost systems in every considerable business and industry. It is commonly maintained that even in 1930 many concerns are without definite knowledge of the actual costs at which their products are produced. (2) That where Cost Accounting is carried on it should be used in a manner to control operating efficiency. "Cost records which are merely records of past achievements are scarcely worth the expense

of collection." (Edie.) (3) Uniformity of cost system throughout each particular trade or industry is essential. Only by this means is comparison possible between different producers in the same business.

Thirdly, improved distribution of resources between different occupations or industries and between different times is not the only way in which the community may benefit from increasing co-operation between economics and Cost Accounting. Much too can be gained by influencing the actual forms of economic organization. Thus, whether resources are better devoted to large or small concerns in an industry, can at present only be answered deductively or by trusting implicitly in inferences drawn from the actual tendencies of the time. But so far as I know there is no authentic or conclusive answer possible to the question whether or no large amalgamations are likely to prove more efficient than small ones. Now as Mr. H. D. Henderson has said, "It is hardly too much to say that the issue as to whether the size of the typical business unit will continue to become larger and larger, or whether it has already overshot the point of maximum efficiency will turn largely upon the capacity of accounting (he is writing of 'comparative costing') to supply large and complex undertakings with some accurate instruments of detailed financial measurement."

Co-operation Necessary

Finally, the practical working out of certain economic policies depends entirely upon the successful co-operation between Cost Accounting and Economics. The truth of this opinion was verified abundantly during the war both in this country and abroad. Let me prove it by referring briefly to the work of the War Industries Board of the U.S.A. As a result of war conditions it became necessary for the Federal Government of the U.S.A. and for the Government of this country, to undertake the control of price. To that end in the United States the Federal Trade Commission was required to collect information concerning the cost of production of all the principal commodities necessary for the effective production of war materials. In order to determine the price to be declared for individual products the Government authorities had to work out the quantity of each product, which it estimated was required. Having made this calculation, it had next to decide the level at which prices would have to be fixed in order to call out that amount. Clearly the price fixed would have to be high enough to call out that part of the total output which just brought the production at that price up to the quantity which the authorities estimated to be necessary. In other words, the data provided by the Cost Accountant was interpreted in the light of the "marginal cost" principle of economic theory.

In the same way many other aspects of economic policy depend or ought to depend upon the results of investigations worked out by Accountants and economists in co-operation. There are many signs, evidence of which is to be found, for example, in the work of the Royal Commission on the Coal Industry of 1925, and the Colwyn Committee on National Debt and Taxation of 1927, that in this country the need for co-operation is being realized. Accordingly, therefore, economists and Accountants may renew their faith in their own work and at the same time look to the future of this partnership with increasing confidence and goodwill.

CHAPTER NOTES

MONTREAL

D. R. Patton, C.A., Secretary

Montreal Chapter officially closed its 1929-1930 session on April 10th with its Seventh Annual Dinner—enjoying a dinner that was equally as brilliant and even a little more enjoyable than any of its predecessors.

Professor William Caldwell, as the principal speaker of the evening, was in a large measure responsible for the peculiar interest of the members. Professor Caldwell has become an outstanding character in the study of Canadian and European affairs—his education in England, Scotland and the Continental countries, his teaching experiences in the United States and Canada, and his lecturing excursions through many parts of Europe, have given him that breadth of vision invaluable to a scholar and philosopher and a student of international affairs. He was able to speak of "Canada in the Eyes of the World" as one whose knowledge had been acquired by personal observations and contact and whose study had been most inclusive.

Professor Caldwell's picture of Canada's future was a most inspiring one—Canada the interpreter of and intermediary between not only Britain and the United States, but all sections of the Old World and all sections of the New. Canada, through Britain, has a much more vivid introduction to things European than have any of the American countries—while on the other hand she is an essential unit of America, individual in personality yet closely linked with the other portions in understanding.

Professor Caldwell as a staunch Britisher is thoroughly convinced that Canada's greatest future lies within the Empire, and that she will continue to play a worthy and increasingly important part in the Imperial programme.

Professor R. R. Thompson, who occupied the chair, was surrounded by the usual galaxy of distinguished local citizens, and on this occasion their ranks were complemented by additions from Toronto and Hamilton. Brief remarks were made by several of the guests, including Dean Ira MacKay of McGill University, Mr. Henry Morgan, representing the Montreal Board of Trade, and Mr. S. E. LeBrocq, who made his debut as President of our Society.

The incoming Chairman of the Montreal Chapter, Mr. G. T. Bowden, was officially vested with his new authorities, and took over the reins of office with a grace born of long experience.

Several excellent musical numbers added the touch which made this annual function one of the most enjoyable held by this Chapter.

In closing, I wish to take the opportunity to thank most sincerely all those friends, both in Montreal and elsewhere, who have made the duties as Montreal Secretary such a real pleasure, and I know that you will afford Mr. Blunt the same friendly advice and hearty co-operation which are at all times so much appreciated.

HAMILTON

Hamilton Chapter responded nearly full strength to the invitation of Firestone Tire & Rubber Co. of Canada, Ltd., for a visit to its plant on April 16th. Arriving at 4 p.m. the members were divided into several groups, and each group was conducted through the various departments by one of the staff. The company's plant is practically new and it is one of which any business organization might well be proud.

Our members seemed impressed most of all with the detailed care exercised in the building of a tire, and in the amount of labor, both mechanical and hand, involved in the process. They will at least be able to tell the buyer of a tire that he is getting much more than a few pounds of rubber and cotton. It is evident, from a view of the work, that a great deal of brain work and experiment has been applied to the problem of getting the greatest life out of a given quantity of material.

The party was entertained at supper in the company's cafeteria. S. S. Du Moulin, secretary-treasurer of the company, sketched briefly the growth of the Firestone business. A. J. Felton, of Alexander Hamilton Institute, gave some business pointers. S. E. LeBrocq, newly elected president of the Society, spoke briefly regarding the work of the Society. M. I. Long, C.A., retiring president of Hamilton Chapter, occupied the chair, and expressed his regret that the new chairman, G. E. F. Smith, C.A., could not be on hand.

For this enjoyable event the Chapter is indebted to Andrew J. Ballantyne, cost accountant of the Firestone company, who is also a director of Hamilton Chapter for the ensuing year.

COSTS OF GREATEST IMPORTANCE IN DULL TIMES

IN an address before the Electrical Club, Montreal, on February 26, R. O. Sweezey, president of Newman, Sweezey & Company, and president of Beauharnois Light, Heat & Power Company, referred to the importance of cheap and adequate power, and low production costs in manufacturing, as two important factors in the development of Canada.

Conditions in trade and commerce in the Dominion are at present at a low ebb in the opinion of Mr. Sweezey, but there are tremendous possibilities and few obstacles ahead, and the opportunities for individuals are manifold. In industry care must be taken to see that commodity costs are reduced as far as possible. In every branch there are ways in which this can be effected, and because Canada has cheap power and wood she must see that they are not mishandled.

Dangers of overproduction in Canada must be considered. At the present time all the work necessary in the world can be done in about three days a week, and the problem is what to do with the remaining days. The difficulty lies in the irregular distribution of wealth. Mr. Sweezey suggested that the fact that rich men's sons seldom follow in their father's footsteps with great success was a point that should be considered. If it meant that rich men who are also the hard workers were not able to pay sufficient attention to the upbringing of their family, then the situation was serious.

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THE TREND OF PRODUCTION COSTS

THE duller tone of business has brought lower prices for many commodities, both raw and manufactured, so that average levels are reduced. The Dominion Government index, based on 1926 prices and covering 502 commodities, declined in March from 94.0 to 91.9. The general trend in April was again lower, the four cent reduction in copper being a notable illustration.

Index numbers by main groups compare as follows:

	March 1929	Feb. 1930	March 1930
Foods, beverages and tobacco	98.8	103.0	100.1
Other consumers' goods	91.8	89.7	89.0
Producers' equipment	94.1	96.2	96.2
Building and construction materials	100.6	96.6	96.0
Manufacturers' materials	95.4	90.7	87.4
Producers' materials, all	96.3	91.8	89.0
Producers' goods, total (including equipment and materials)	96.1	92.2	89.7
All commodities	95.5	94.0	91.9

The most important reductions in March were in the following: grains, sugar, vegetables, hides and skins, eggs, silk fabrics, raw wool and wool yarns, wood pulp, lead, tin, zinc and solder. The only class to show an advance of importance was foreign fresh fruits.

Demand for workers is not now so active, but wage rates are not reduced.

COST MEN AVAILABLE

WE reprint below our list of cost men available, revised to May 1st. They are now arranged by our Chapter territories, but it should be noted that some of these men are open for positions anywhere. Most of them are now employed.

Members or others desiring help of this kind are invited to write to the secretary of the Society indicating by number the men from whom they would like to receive direct applications or further particulars. It will also be helpful if they will advise the nature of the position, salary proposed, etc.

Montreal Territory

No. 1—Age 31. Married. Graduate of J. Lee Nicholson Inst. of Accountancy. Now enrolled for LaSalle Higher Accountancy course. Experienced in general and cost accounting, in cement, iron and steel, rubber and imitation leather industries. Montreal vicinity.

No. 2—Age 34. Graduate of Royal High School, Edinburgh. Experienced in banking, accounting in foreign trading.

No. 3—Age 30. Graduate of High School (Commercial course). Experienced in general office work, costing and analysing. Montreal vicinity.

No. 4—Age 40. Married. Five years practical training in accountancy. Considerable experience in costing since expiration of apprenticeship including every branch of accountancy from office routine to executive duties in connection with operative management.

No. 5—Age 45. Good education. Experienced in banking and cost accounting. Vicinity immaterial.

No. 6—Age 34. Married. Four years experience cost accounting for an engineering company. Vicinity immaterial.

No. 7—Age early thirties. Industrial and cost engineer experienced in installation and constructive cost work in many industries.

No. 8—Age 24. Five years experience in accountancy which includes 2 years cost accounting in paper and lumber mills. Vicinity immaterial.

No. 9—Age 34. Married. Bilingual. Good college education. Taken course in advanced accountancy at McGill University. Accounting experience includes preparation of commercial and industrial costs, budgets, etc.

No. 10—Age 43. Married. Experienced in bookkeeping and accounting. Knowledge of industrial plant work, organization and maintenance. Vicinity immaterial.

No. 11—Age 37. Married. Experienced in trust and industrial concerns.

No. 12—Age 33. Married. Experienced as factory representative, statistical reporter, general and cost accountant. Vicinity immaterial.

No. 13—Age 31. Married. Taken course of International Cost Society. Several years experience in cost accounting. Ontario preferred.

No. 14—Age 46. Single. Experienced in cost accounting, sales and office management. Bilingual.

No. 15—Age 41. Married. Graduate of College of Technology, Manchester. General knowledge of office accountancy also practical factory experience in costing of cottons, art silks, etc. Ontario preferred.

No. 16—Age 30. Married. Taking Higher Accountancy course, LaSalle Extension University. Experienced in typing, invoicing, stock recording, general and cost accounting. Montreal vicinity.

No. 17—Varied cost accounting experience includes public utilities, contracting. Past 12 years employed by iron corporation.

No. 18—Age 36. Married. Now taking course in Higher Accountancy with LaSalle Extension University. Experienced as cashier, assistant secretary-treasurer, general and cost accountant. Toronto preferred.

No. 19—Age 45. Married. High School and business college. Experienced in office management and accounting. Toronto preferred.

No. 20—Age 49. Married. Knowledge of cost accounting. Has held the positions of president, secretary-treasurer and bank manager in different institutions.

No. 21—Age 50. Married. Experienced in auditing, purchasing, general and cost accounting.

No. 22—Age 46. Married. Educated in England. Admitted as C.A. in 1915. Particularly interested in cost accounting.

No. 23—Age 50. Married. Took course in Chartered Accountancy with Shaw Schools, Ltd., also Immediate examination of Ontario Institute of Chartered Accountants. Many years experience in every branch of lumber work. Small town preferred.

Toronto Territory

No. 101—Age 33. Married. Two years with C.A. in England. Experienced in office managing, auditing, and accounting.

No. 102—Fourth year university student desires part time position. Experience of payroll and manufacturing labour cost of food production concern.

No. 103—Age 38. Experienced as assistant chief accountant.

No. 104—Age 30. Experienced in construction and mines in Northern Ontario.

No. 105—Age 23. Experienced as assistant bookkeeper, timekeeper, audit and stores clerk.

No. 107—Experienced in various industries and financial work.

No. 108—University of Manitoba three years. Graduate in public auditing and cost accounting.

No. 109—Age 35. Married. Experienced in construction work.

No. 110—Age 42. Experienced in costing of both shoe trade and construction work.

No. 111—Age 42. Eighteen years experience in cost and general accounting for coal company.

No. 112—Age 45. Married. Graduate of International Accountants Society. Twenty years experience in accounting, office managing, buying and organizing. Three years public auditing. Able to install Inter-locking system.

No. 113—Age 33. Married. Experienced in cost accounting of construction cost of illumination development. Preferably Toronto or district.

No. 114—Age 37. Good education. Graduate of International Accountants Society. Four years with a leather goods manufacturer and 9 years with a general electrical apparatus concern.

No. 115—Age 38. Married. Fourteen years with a dairy machinery manufacturer. Now in charge of cost, payroll and production departments of that company.

No. 116—Age 34. Graduate in accountancy. Several years costing experience.

No. 117—Age 36. Took Alexander Hamilton Institute course. Twelve and one-half years costing and auditing in automobile industry.

No. 118—Age 30. Married. Experience in automobile industry.

No. 119—Age 21. Fair education. At present taking course of International Accountants Society, Inc. Three years in cost and stock department of retail furniture business.

No. 120—Age 29. Junior Matriculant. Took business studies with High School of Commerce also Alexander Hamilton Institute. General accounting experience.

No. 121—Age 36. Long experience in cost accounting.

No. 122—Age 35. Good education. Special course in Safety Engineering and Accounting with Buffalo University. Three years costing experience.

No. 123—Three and a half years experience in a cost department.

No. 124—Age 40. Experienced in accounting.

No. 125—Age 50. Married. Experienced in wholesale firm and in auditing. Ontario preferred.

No. 126—Married. Experienced as office executive and accountant. Would take entire charge of staff, handle costs, production or any responsible position in keeping with a long and excellent experience. Toronto preferred.

No. 127—A student of the Institute of Cost and Works Accountants of London. Experienced in costing of steel industry.

Hamilton Territory

No. 201—Age 20. Taking Higher Accountancy course with La Salle Extension University. Three years cost experience.

No. 202—Age 40. Many years experience in general and cost accounting in steel industry.

No. 203—Age 28. Married. Experienced in general office work, also in cost accounting of furniture and of automobile bodies. Vicinity immaterial.

No. 204—Age 25. Single. High School education also university training in the manufacture of woollen and worsted yarns. Four years experience as cost accountant in blanket manufacturing concern. Anywhere in Canada.

No. 205—Age 24. Partial Matriculation, also business course. Four years experience in cost department.

No. 206—Age 27. Married. Good education. Graduated in a secretarial course. Now taking International Accountants Society course. Five years experience in accounting.

No. 207—Age 33. Married. University education. Progressively works manager, chief accountant, company secretary of radio corporation.

No. 208—Age 45. Married. Public School education. Eighteen years various capacities, weight and cost clerk, cashier, general ledger chief of accounts.

No. 209—Many years cost accounting experience in wire goods industry.

No. 210—Experienced auditor.

No. 211—Age 28. Married. Experienced in costing of furniture.

No. 212—Age 19. Some time in the cost department of a rubber plant.

No. 213—Age 38. Married. Experienced in banking, office managing, installing of Harrison Standard System. Two year contract expected.

Central Ontario Territory

No. 301—Age 25. Nine years experience as time-keeper and stores clerk for railway company.

No. 302—Twelve years experience in all branches of furniture trade, including general and cost accounting.

Winnipeg Territory

No. 401—Age 42. Married. Trained in accounting, economics and commercial law. Experienced in costing and statistical work. Winnipeg vicinity.

No. 402—Age 31. Graduate of La Salle Higher Accountancy course. Experienced ledger-keeper, teller, pay-sergeant, general and cost accountant. Toronto vicinity.

No. 403—Age 22. Married. Graduate of The Cooper Institute of Accountancy, Winnipeg, in accounting and business administration, also cost accounting. Experienced bookkeeper, without practical experience in cost accounting but desirous of obtaining position of assistant to cost accountant. Winnipeg vicinity.

No. 404—Age 30. Experienced in accounting and costing. Formerly secretary-treasurer of scientific farming enterprise. Preferably the east.

No. 405—Age 65. Second class teacher's certificate. Experienced in teaching, bookkeeping, accounting, auditing, installing systems in municipalities and corporations. Vicinity of Winnipeg or Toronto under three or five year contract.

No. 406—Age 26. Married. Two years engineering course at University of Manitoba. Five years costing experience.

No. 407—Age 42. Married. Good education. Experience includes general and cost accounting, preparation of interim financial statements and statistical reports showing results by means of graphs. Toronto preferred.

No. 408—Age 49. Graduate of Ottawa University. Speaks French language fluently. Long experience in general and cost accounting, also office managing. Winnipeg vicinity.

No. 409—Age 36. Good education. Seven years experience in installation and supervision of cost systems. Formerly assistant and executive secretary of a manufacturing association. Vancouver or district.

No. 410—Age 23. Graduate of Sprott-Shaw Business College. Now taking La Salle Extension course in Higher Accountancy. Experienced as stenographer, file clerk, assessor, office assistant.

No. 411—Age 33. Fourteen years varied office and accounting experience, 6 years of which has been in all departments of mine accounting. Open for position of chief accountant for a mining company, or as senior accountant in any other industry. Near Pacific Coast preferred.

No. 412—Age 26. Single. Good education. Now taking higher accountancy course with La Salle Extension University. Experienced as bookkeeper, assistant managing director, purchasing agent and cost accountant.

No. 413—Age 37. Long experience in cost accounting in mining industry. Vicinity immaterial.

No. 414—Age 38. Married. Experienced in banking, bookkeeping, cost accounting. Toronto or district.

No. 415—Age 36. Married. Good education. Now studying cost accounting with The International Accountants Society Inc. With the exception of six months spent in the office of a sugar plantation, experienced only in hardware trade.

Outside Canada

No. 501—Age 30. Married. Experienced as office manager, purchasing agent, dit manager and cost accountant. Now in United States but desirous of again locating in Canada.